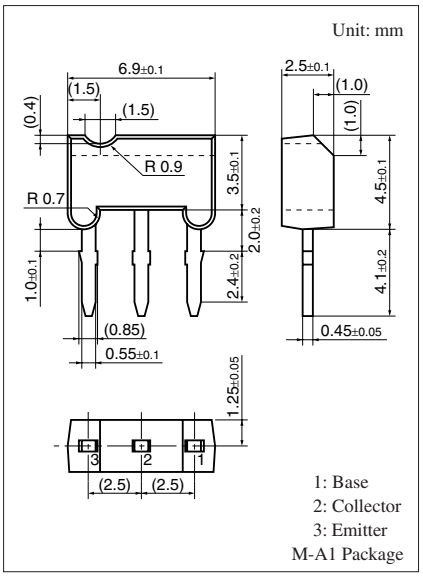
查询UNR1110|UN1110供应商

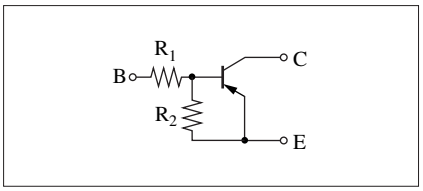
UNR111x Series (UN111x Series)

Silicon PNP epitaxial planar transistor

For digital circuits



Internal Connection



■ Features

- Costs can be reduced through downsizing of the equipment and reduction of the number of parts
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

■ Resistance by Part Number

	(R_1)	(R_2)
• UNR1110 (UN1110)	47 kΩ	—
• UNR1111 (UN1111)	10 kΩ	10 kΩ
• UNR1112 (UN1112)	22 kΩ	22 kΩ
• UNR1113 (UN1113)	47 kΩ	47 kΩ
• UNR1114 (UN1114)	10 kΩ	47 kΩ
• UNR1115 (UN1115)	10 kΩ	—
• UNR1116 (UN1116)	4.7 kΩ	—
• UNR1117 (UN1117)	22 kΩ	—
• UNR1118 (UN1118)	0.51 kΩ	5.1 kΩ
• UNR1119 (UN1119)	1 kΩ	10 kΩ
• UNR111D (UN111D)	47 kΩ	10 kΩ
• UNR111E (UN111E)	47 kΩ	22 kΩ
• UNR111F (UN111F)	4.7 kΩ	10 kΩ
• UNR111H (UN111H)	2.2 kΩ	10 kΩ
• UNR111L (UN111L)	4.7 kΩ	4.7 kΩ

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	−50	V
Collector-emitter voltage (Base open)	V_{CEO}	−50	V
Collector current	I_C	−100	mA
Total power dissipation	P_T	400	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Note) The part numbers in the parenthesis show conventional part number.

■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)		V_{CBO}	$I_C = -10$ µA, $I_E = 0$	−50			V
Collector-emitter voltage (Base open)		V_{CEO}	$I_C = -2$ mA, $I_B = 0$	−50			V
Collector-base cutoff current (Emitter open)		I_{CBO}	$V_{CB} = -50$ V, $I_E = 0$			− 0.1	µA
Collector-emitter cutoff current (Base open)		I_{CEO}	$V_{CE} = -50$ V, $I_B = 0$			− 0.5	µA
Emitter-base cutoff current (Collector open)	UNR1111	I_{EBO}	$V_{EB} = -6$ V, $I_C = 0$			− 0.5	mA
	UNR1112/1114/111D/111E					− 0.2	
	UNR1113					− 0.1	
	UNR1110/1115/1116/1117					− 0.01	
	UNR111F/111H					−1.0	
	UNR1119					−1.5	
	UNR1118/111L					−2.0	
Forward current transfer ratio	UNR1111	h_{FE}	$V_{CE} = -10$ V, $I_C = -5$ mA	35			—
	UNR1112/111E			60			
	UNR1113/1114			80			
	UNR1110 */1115 */1116 */1117 *			160		460	
	UNR1118/111L			20			
	UNR1119/111D/111F/111H			30			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -10$ mA, $I_B = -0.3$ mA			− 0.25	V
Output voltage high-level		V_{OH}	$V_{CC} = -5$ V, $V_B = -0.5$ V, $R_L = 1$ kΩ	−4.9			V
Output voltage low-level		V_{OL}	$V_{CC} = -5$ V, $V_B = -2.5$ V, $R_L = 1$ kΩ			− 0.2	V
	UNR1113		$V_{CC} = -5$ V, $V_B = -3.5$ V, $R_L = 1$ kΩ				
	UNR111D		$V_{CC} = -5$ V, $V_B = -10$ V, $R_L = 1$ kΩ				
	UNR111E		$V_{CC} = -5$ V, $V_B = -6$ V, $R_L = 1$ kΩ				
Transition frequency		f_T	$V_{CB} = -10$ V, $I_E = 2$ mA, f = 200 MHz		80		MHz
Input resistance	UNR1111/1114/1115	R_1		−30%	10	+30%	kΩ
	UNR1112/1117				22		
	UNR1110/1113/111D/111E				47		
	UNR1116/111F/111L				4.7		
	UNR1118				0.51		
	UNR1119				1		
	UNR111H				2.2		
Resistance ratio	UNR1111/1112/1113/111L	R_1/R_2		0.8	1.0	1.2	—
	UNR1114			0.17	0.21	0.25	
	UNR1118/1119			0.08	0.1	0.12	
	UNR111D				4.7		
	UNR111E				2.14		
	UNR111F				0.47		
	UNR111H			0.17	0.22	0.27	

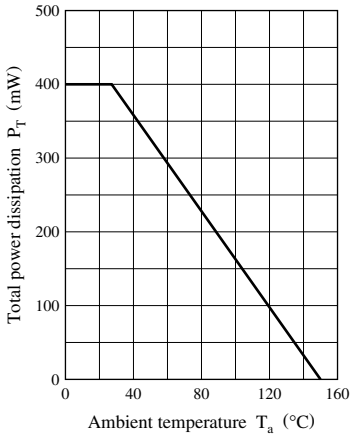
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification (UNR1110/1115/1116/1117)

Rank	Q	R	S
h_{FE}	160 to 260	210 to 340	290 to 460

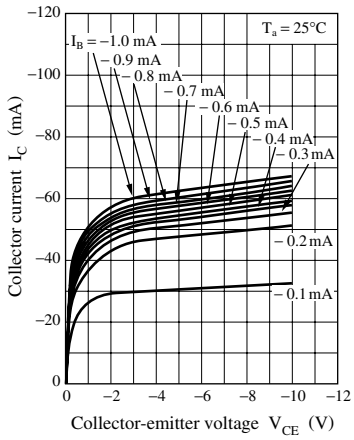
Common characteristics chart

P_T — T_a

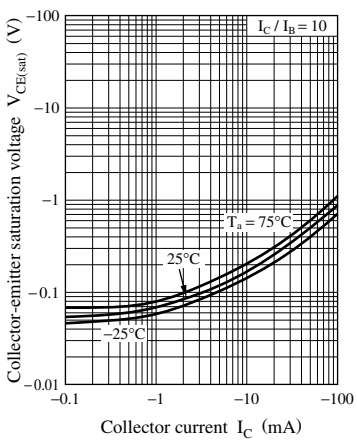


Characteristics charts of UNR1110

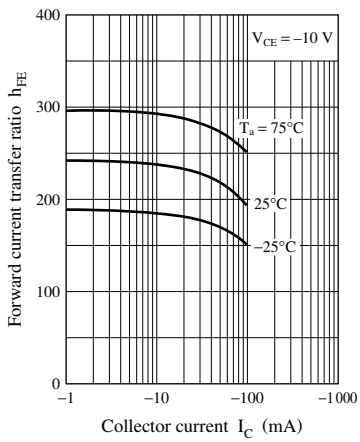
I_C — V_{CE}



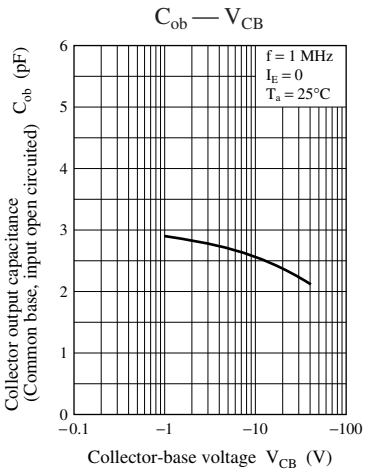
$V_{CE(sat)}$ — I_C



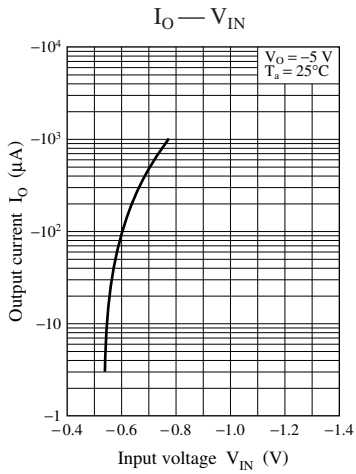
h_{FE} — I_C



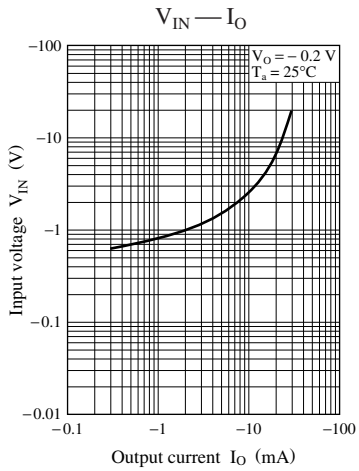
C_{ob} — V_{CB}



I_O — V_{IN}

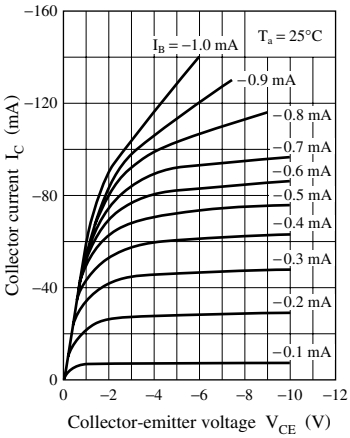


V_{IN} — I_O

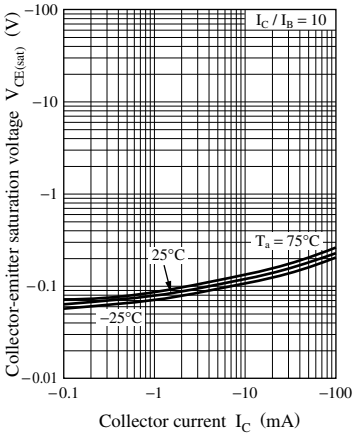


Characteristics charts of UNR1111

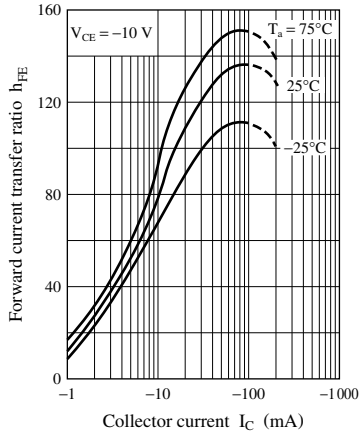
I_C — V_{CE}



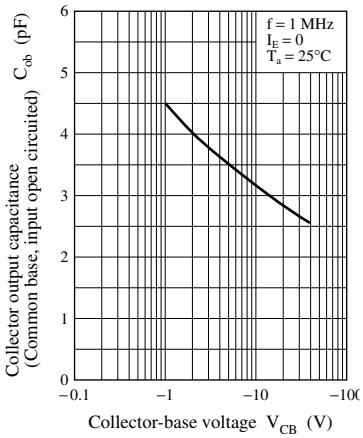
$V_{CE(sat)}$ — I_C



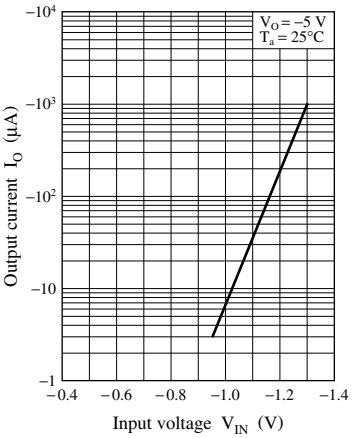
h_{FE} — I_C



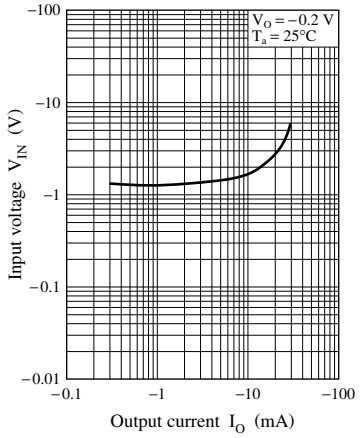
C_{ob} — V_{CB}



I_O — V_{IN}

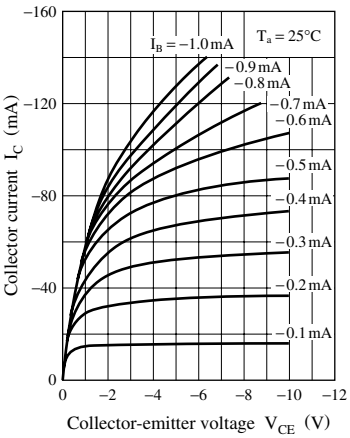


V_{IN} — I_O

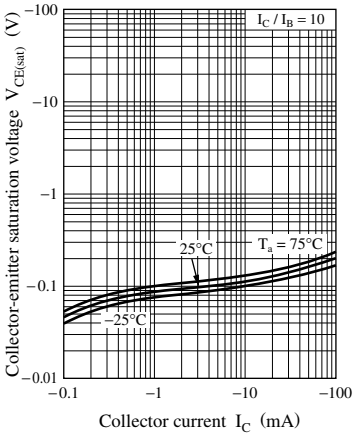


Characteristics charts of UNR1112

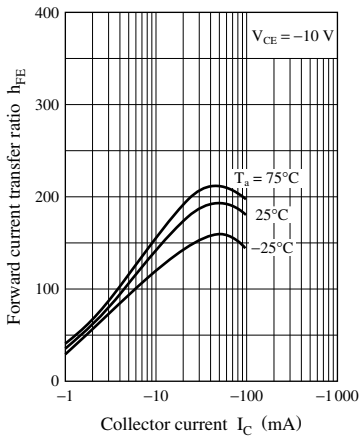
I_C — V_{CE}



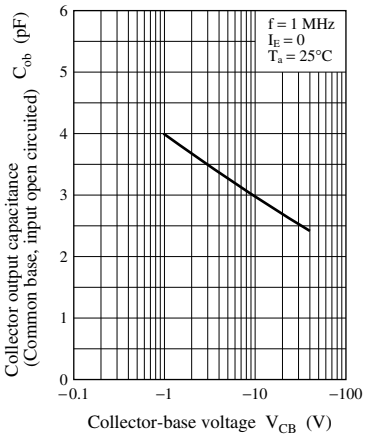
$V_{CE(sat)}$ — I_C



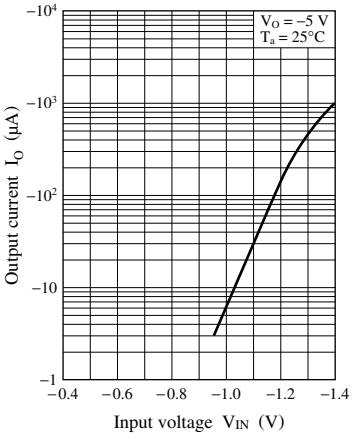
h_{FE} — I_C



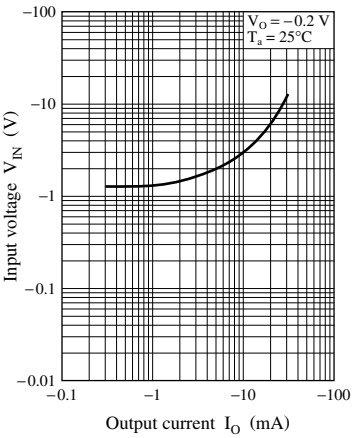
C_{ob} — V_{CB}



I_O — V_{IN}

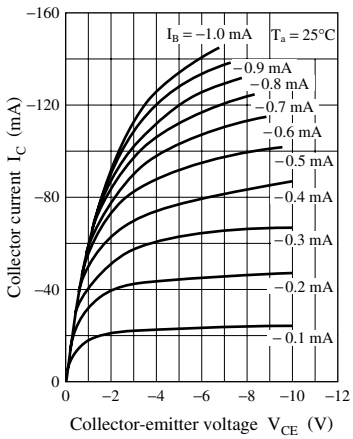


V_{IN} — I_O

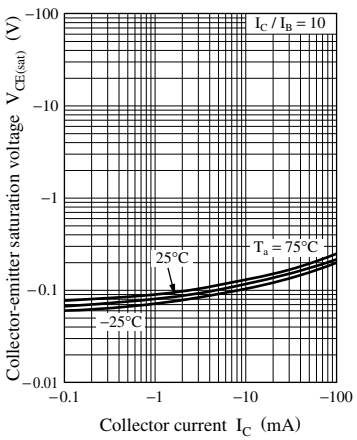


Characteristics charts of UNR1113

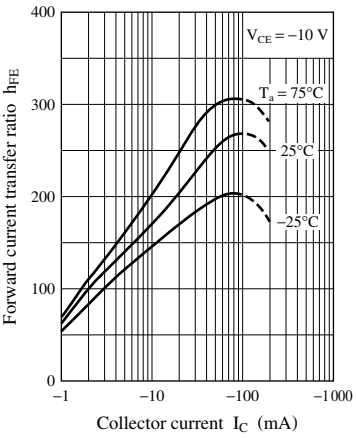
I_C — V_{CE}



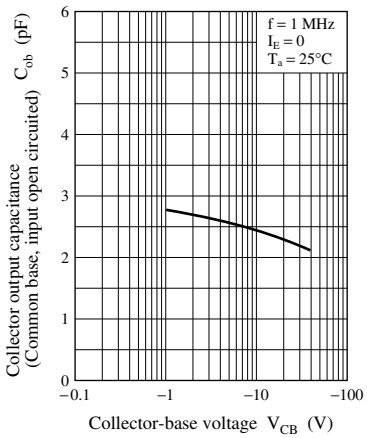
$V_{CE(sat)}$ — I_C



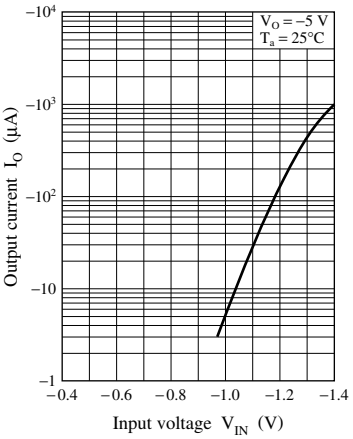
h_{FE} — I_C



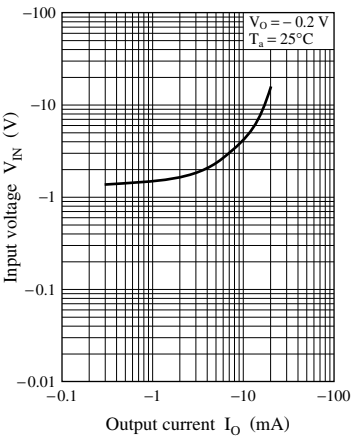
C_{ob} — V_{CB}



I_O — V_{IN}

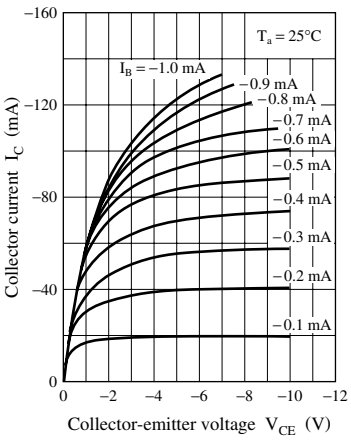


V_{IN} — I_O

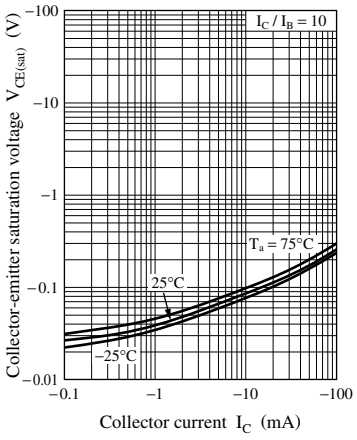


Characteristics charts of UNR1114

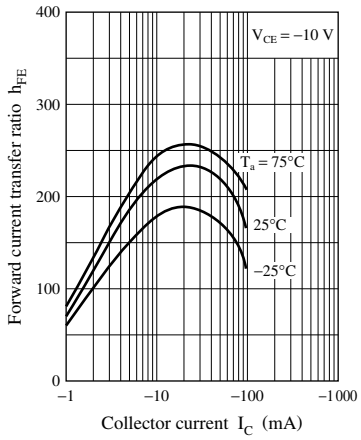
I_C — V_{CE}



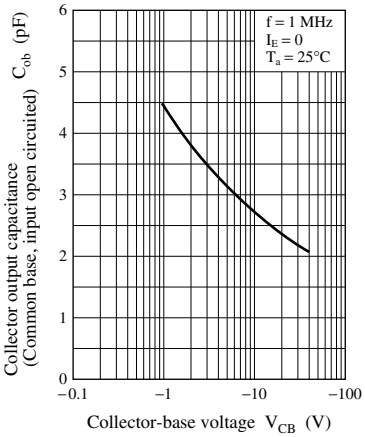
$V_{CE(sat)}$ — I_C



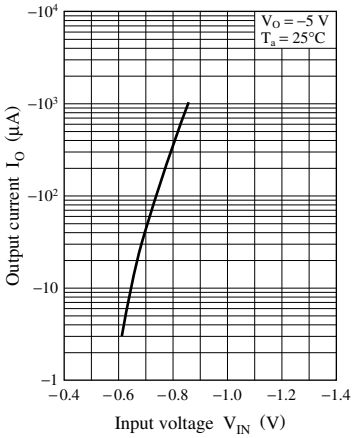
h_{FE} — I_C



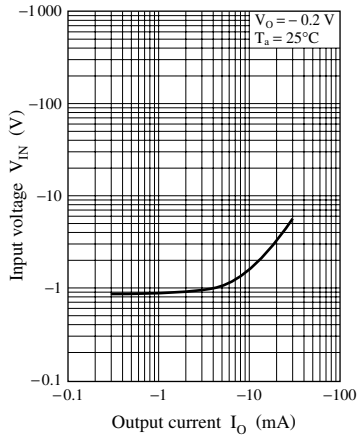
C_{ob} — V_{CB}



I_O — V_{IN}

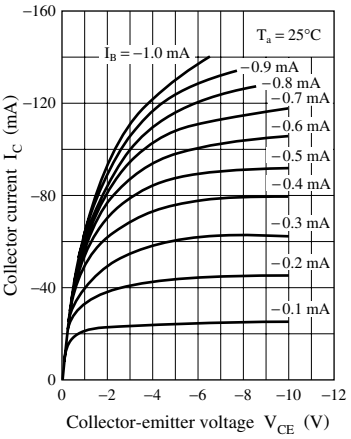


V_{IN} — I_O

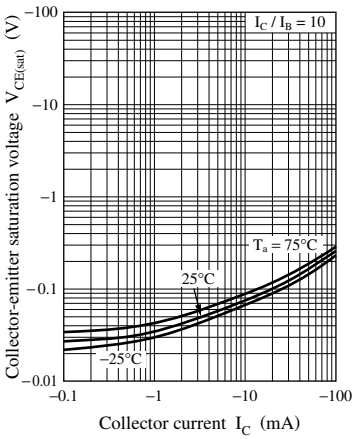


Characteristics charts of UNR1115

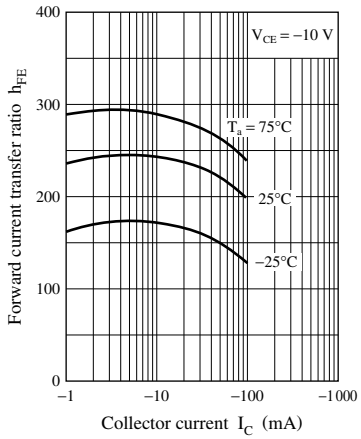
I_C — V_{CE}



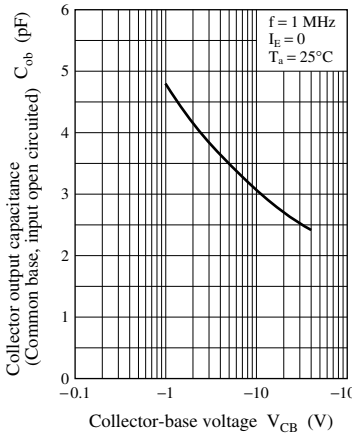
$V_{CE(sat)}$ — I_C



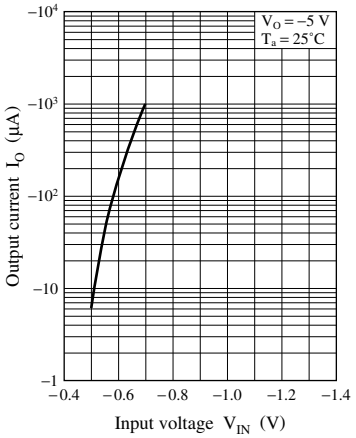
h_{FE} — I_C



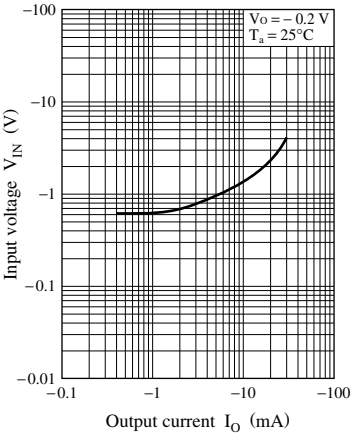
C_{ob} — V_{CB}



I_O — V_{IN}

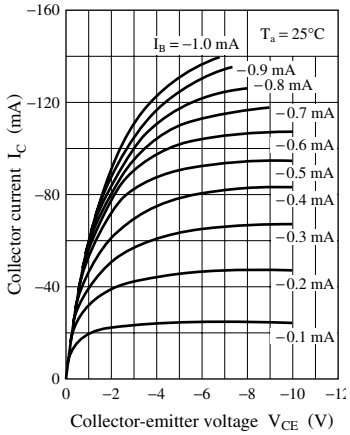


V_{IN} — I_O

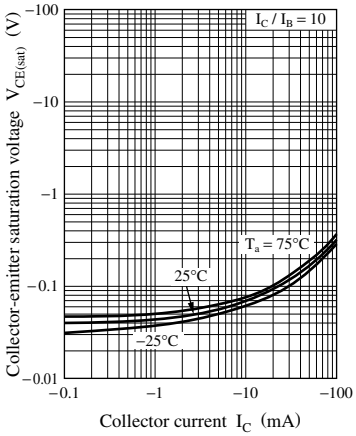


Characteristics charts of UNR1116

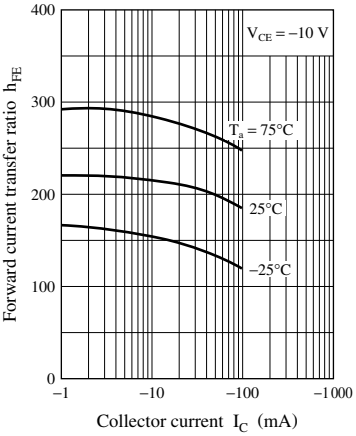
I_C — V_{CE}



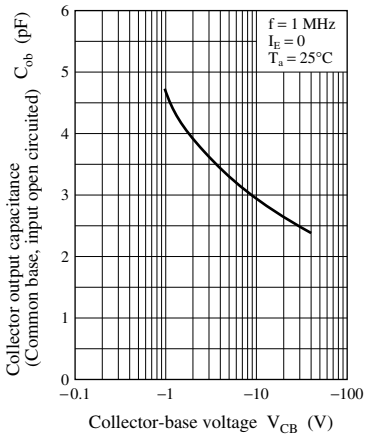
$V_{CE(sat)}$ — I_C



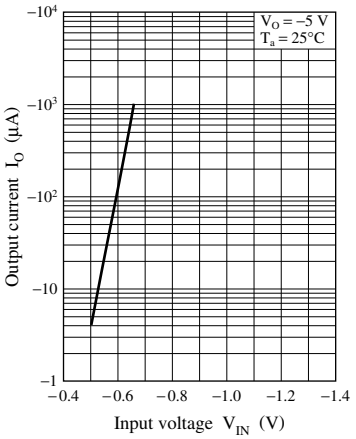
h_{FE} — I_C



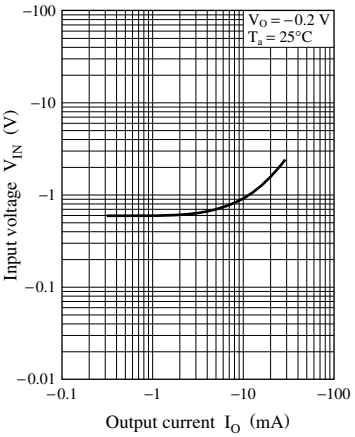
C_{ob} — V_{CB}



I_O — V_{IN}

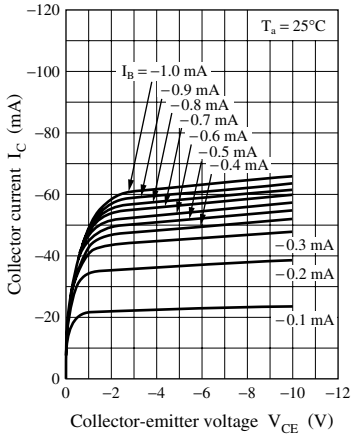


V_{IN} — I_O

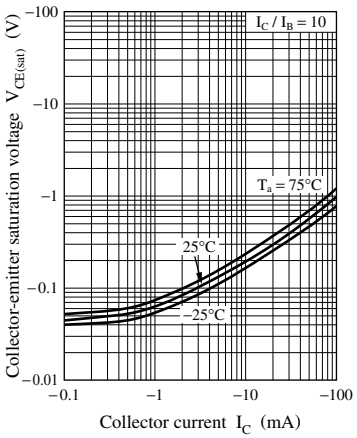


Characteristics charts of UNR1117

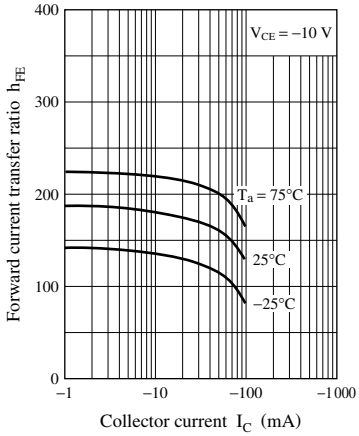
I_C — V_{CE}



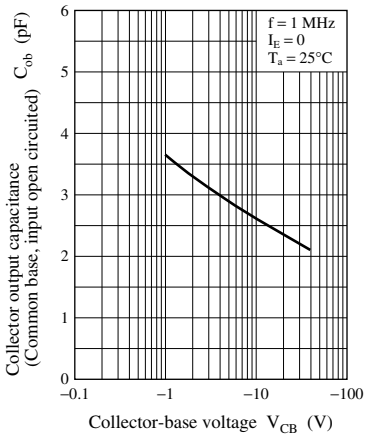
$V_{CE(sat)}$ — I_C



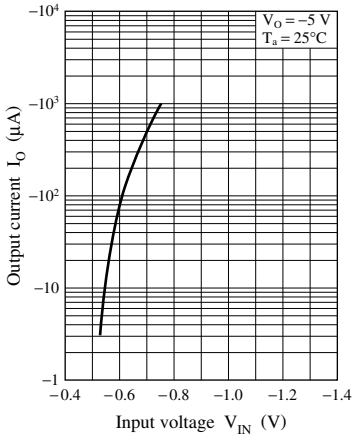
h_{FE} — I_C



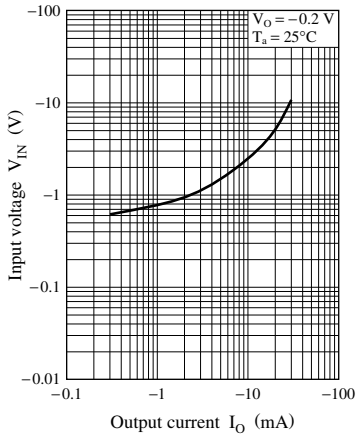
C_{ob} — V_{CB}



I_O — V_{IN}

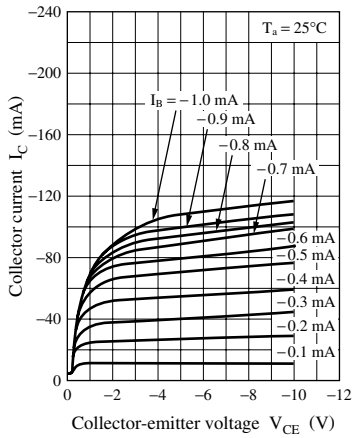


V_{IN} — I_O

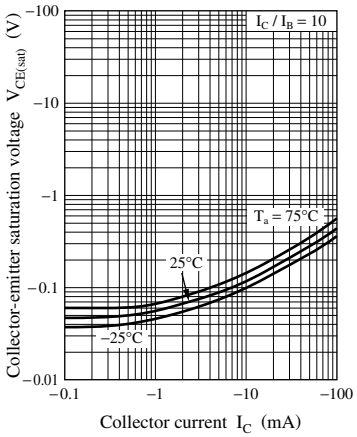


Characteristics charts of UNR1118

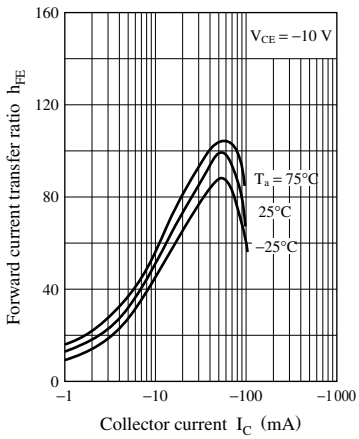
I_C — V_{CE}



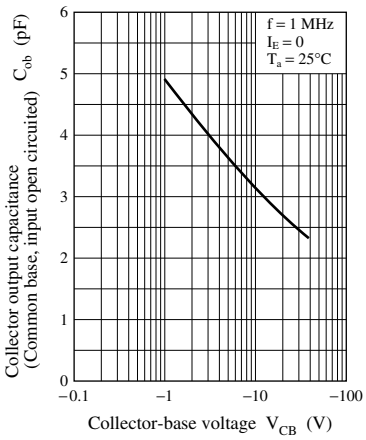
$V_{CE(sat)}$ — I_C



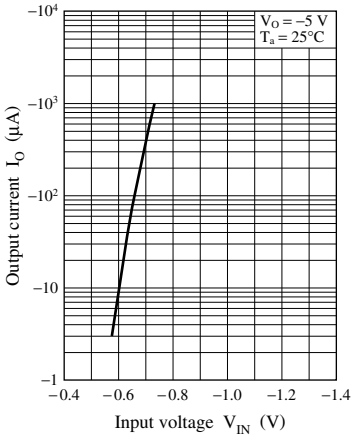
h_{FE} — I_C



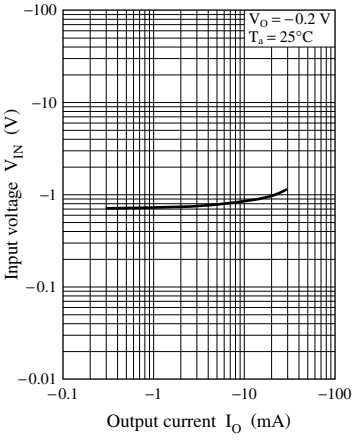
C_{ob} — V_{CB}



I_O — V_{IN}

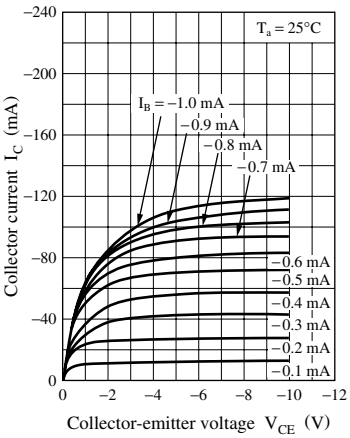


V_{IN} — I_O

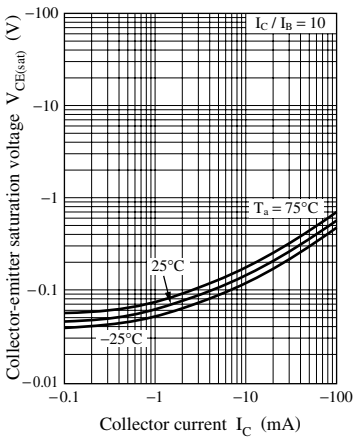


Characteristics charts of UNR1119

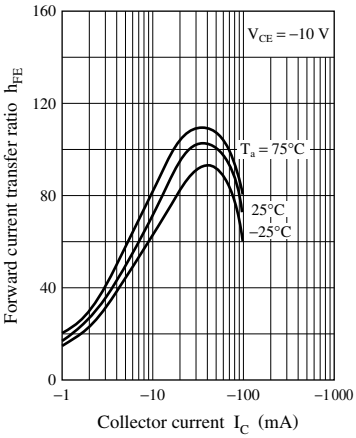
I_C — V_{CE}



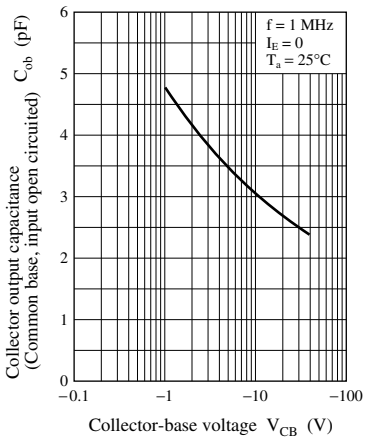
$V_{CE(sat)}$ — I_C



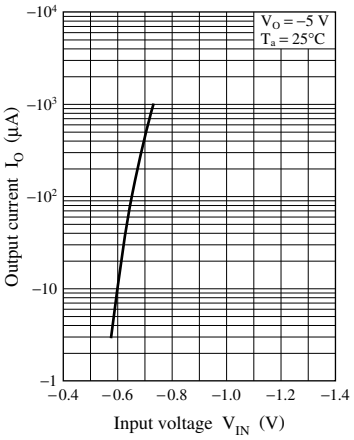
h_{FE} — I_C



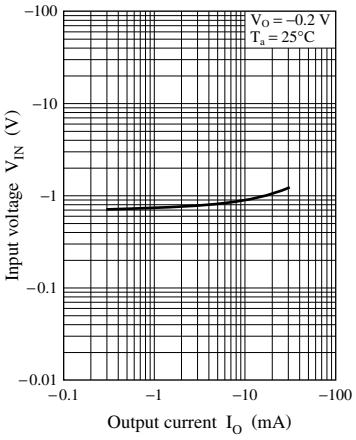
C_{ob} — V_{CB}



I_O — V_{IN}

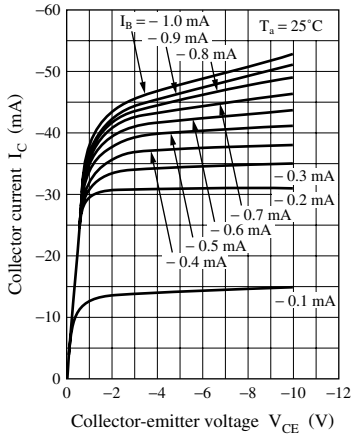


V_{IN} — I_O

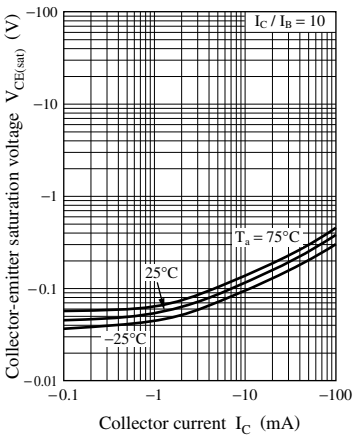


Characteristics charts of UNR111D

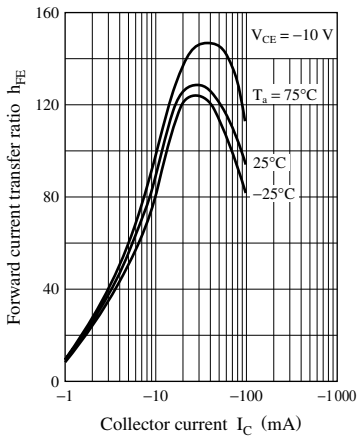
I_C — V_{CE}



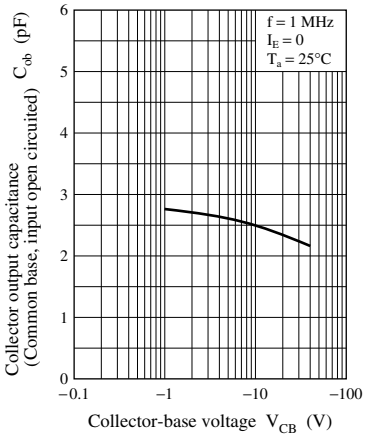
$V_{CE(sat)}$ — I_C



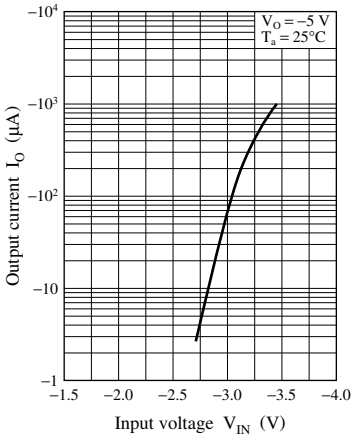
h_{FE} — I_C



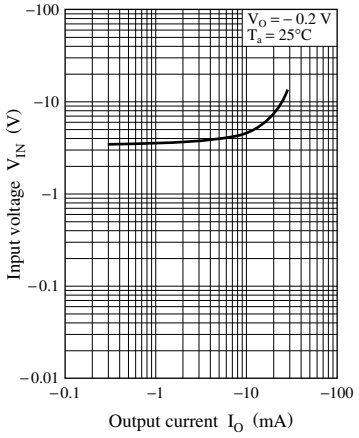
C_{ob} — V_{CB}



I_O — V_{IN}

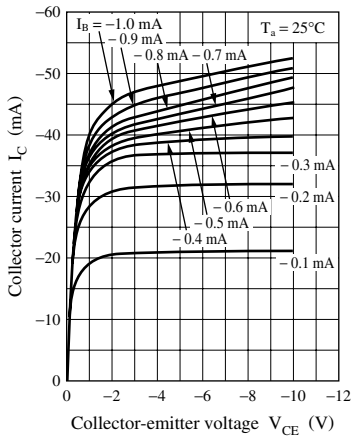


V_{IN} — I_O

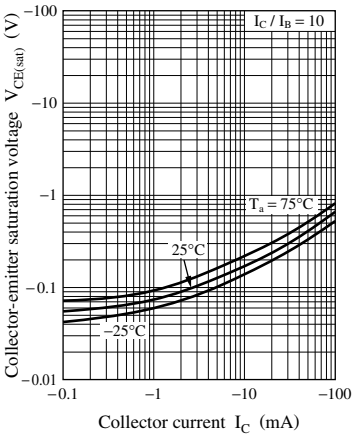


Characteristics charts of UNR111E

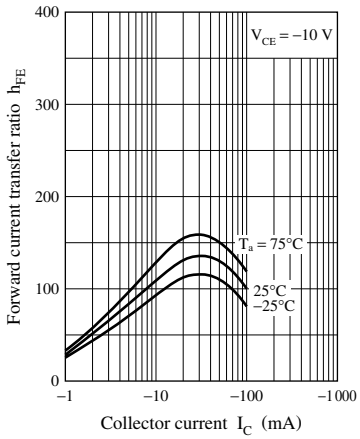
I_C — V_{CE}



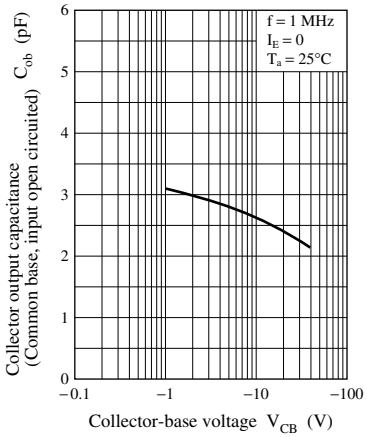
$V_{CE(sat)}$ — I_C



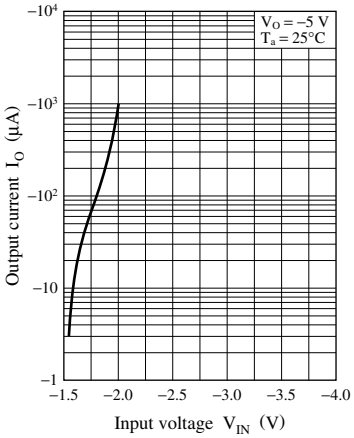
h_{FE} — I_C



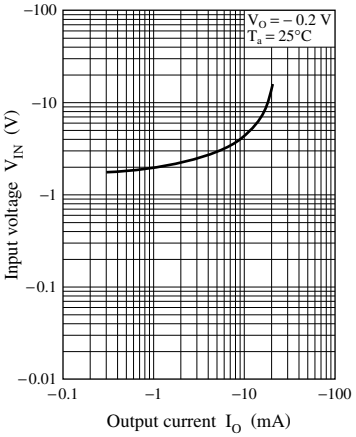
C_{ob} — V_{CB}



I_O — V_{IN}

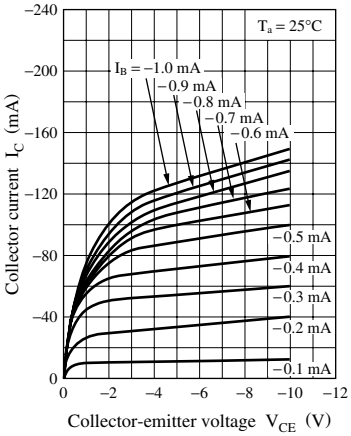


V_{IN} — I_O

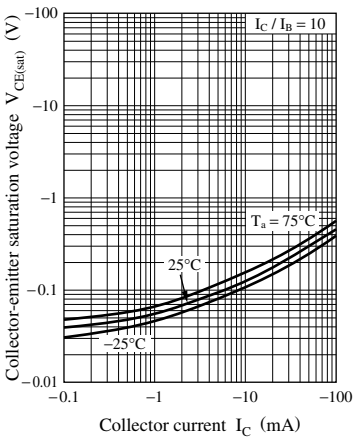


Characteristics charts of UNR111F

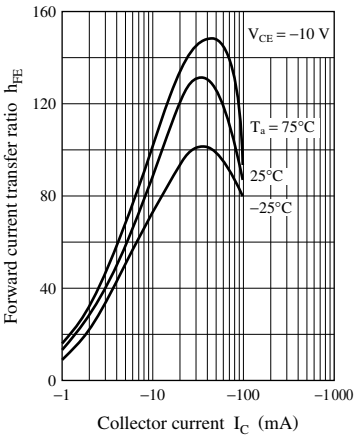
I_C — V_{CE}



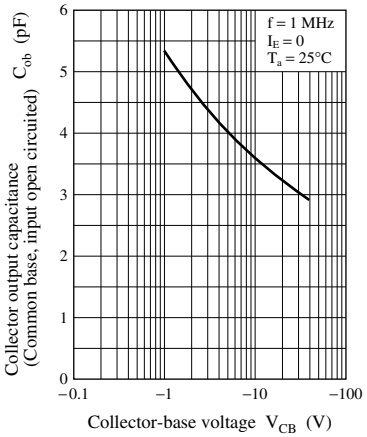
$V_{CE(sat)}$ — I_C



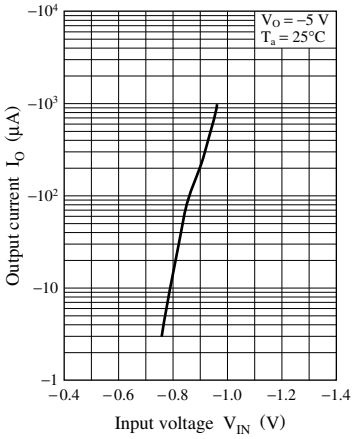
h_{FE} — I_C



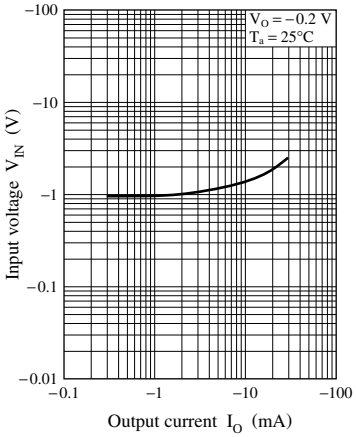
C_{ob} — V_{CB}



I_O — V_{IN}

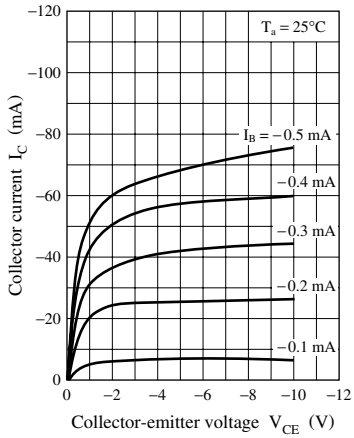


V_{IN} — I_O

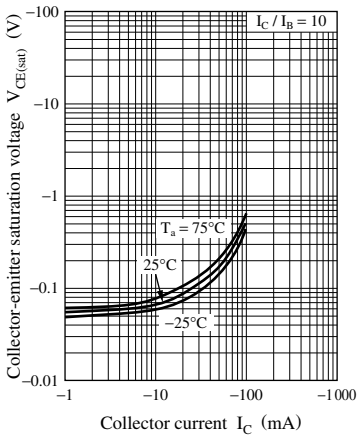


Characteristics charts of UNR111H

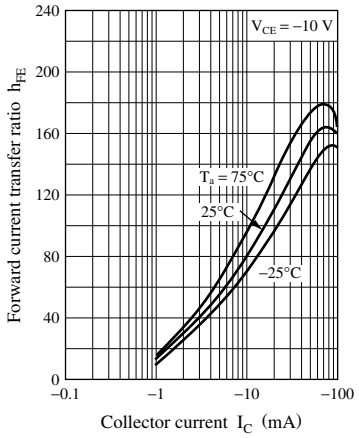
I_C — V_{CE}



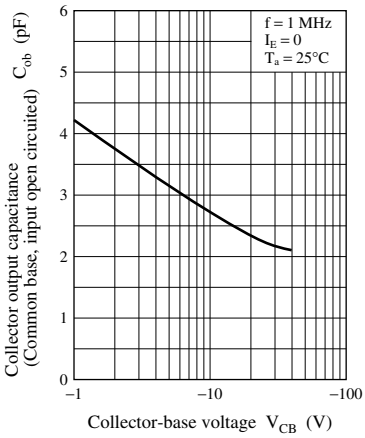
$V_{CE(sat)}$ — I_C



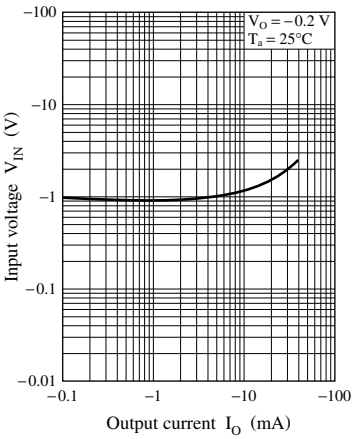
h_{FE} — I_C



C_{ob} — V_{CB}

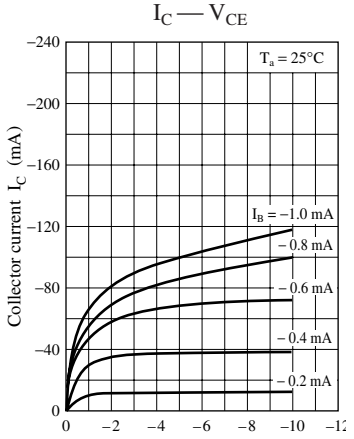


V_{IN} — I_O

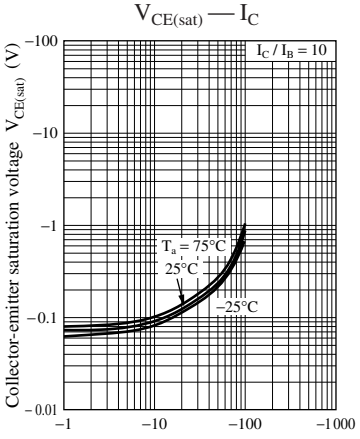


Characteristics charts of UNR111L

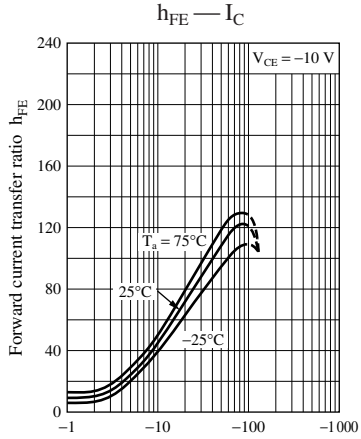
I_C — V_{CE}



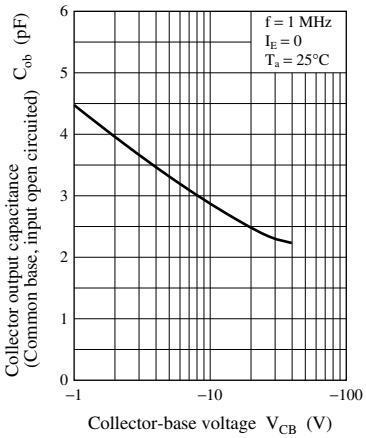
$V_{CE(sat)}$ — I_C



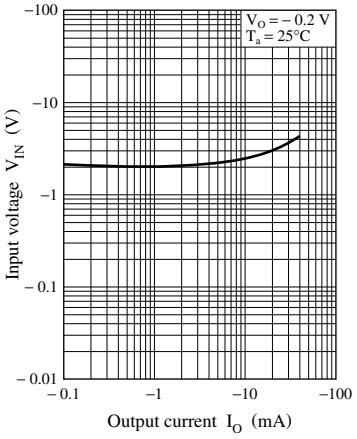
h_{FE} — I_C



C_{ob} — V_{CB}



V_{IN} — I_O



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- Any applications other than the standard applications intended.

(5) The products and product specifications described in this material are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.

(6) When designing your equipment, comply with the guaranteed values, in particular those of maximum rating, the range of operating power supply voltage, and heat radiation characteristics. Otherwise, we will not be liable for any defect which may arise later in your equipment.
Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.

(7) When using products for which damp-proof packing is required, observe the conditions (including shelf life and amount of time let standing of unsealed items) agreed upon when specification sheets are individually exchanged.

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